

## LISTING OF CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application:

1. **(currently amended)** A purified interferon- $\alpha$  molecule that has interferon- $\alpha$  protein biological activity polypeptide, comprising  
~~an-a first amino acid sequence consisting of residues 1-75 of interferon- $\alpha$ 21a from an interferon- $\alpha$ 2c polypeptide, with a mutation of Ser to Tyr at amino acid residue 86 or 90;~~  
~~a second amino acid sequence consisting of residues 76-81 of interferon- $\alpha$ 2c or residues 76-81 of interferon- $\alpha$ 21a;~~  
~~a third amino acid sequence consisting of the sequence LDKFXTELXQQLND or the sequence LEKFXTELXQQLND, wherein X is any amino acid residue; and~~  
~~a fourth amino acid sequence consisting of residues 96-166 of interferon- $\alpha$ 2c;~~  
~~wherein the hybrid interferon- $\alpha$  polypeptide has interferon- $\alpha$  protein biological activity.~~
2. **(currently amended)** The purified interferon- $\alpha$  molecule polypeptide according to claim 1, wherein the ~~second amino acid sequence consists of residues 76-81 of interferon- $\alpha$ 2c polypeptide has a mutation of Ser to Tyr at amino acid residues 86 and 90.~~
3. **(currently amended)** The purified interferon- $\alpha$  molecule polypeptide according to claim 1, ~~comprising at least residues 86 to 90 of the~~ ~~wherein the second amino acid sequence consists of residues 76-81 of interferon- $\alpha$ 21a polypeptide.~~
4. **(currently amended)** The purified interferon- $\alpha$  molecule polypeptide according to claim 31, ~~wherein the third amino acid sequence consists of the sequence LDKFXTELXQQLND comprising at least residues 82 to 95 of the interferon- $\alpha$ 21a polypeptide.~~
5. **(currently amended)** The purified interferon- $\alpha$  molecule polypeptide according to claim 1, ~~wherein the third amino acid sequence consists of the sequence LEKFXTELXQQLND~~ ~~purified interferon- $\alpha$  molecule is a hybrid interferon polypeptide comprising one or more segments of interferon- $\alpha$ 2c and interferon- $\alpha$ 21a.~~

6. **(currently amended)** The hybrid interferon polypeptide according to claim 5<sub>1</sub>, wherein the second amino acid sequence consists of residues 76-81 of interferon- $\alpha$ 2c and the third amino acid sequence consists of the sequence LEKFXTELXQQLND~~hybrid comprises at least amino acid residues 86 or 90 of interferon- $\alpha$ 21a.~~

7. **(currently amended)** The hybrid interferon- $\alpha$  molecule polypeptide according to claim 6, comprising an amino acid sequence with a structure M-N-O-P, wherein M ~~comprises about~~consists of amino acid residues 1-75 of interferon- $\alpha$ 21a, N ~~comprises about~~consists of amino acid residues 76 to 81 of interferon- $\alpha$ 2c, O ~~comprises about~~consists of amino acid residues 82 to 95 of interferon- $\alpha$ 21a, and P ~~comprises about~~consists of amino acid residues 96 to 166 of interferon- $\alpha$ 2c.

8. **(currently amended)** A-The hybrid interferon- $\alpha$  polypeptide according to claim 1, wherein the second amino acid sequence consists of residues 76-81 of interferon- $\alpha$ 2c and the third amino acid sequence consists of the sequence LDKFXTELXQQLNDcomprising an amino acid sequence selected from the group consisting of:

\_\_\_\_ (a) ~~an amino acid sequence as set forth in SEQ. ID NOS: 9, 11, 13, 30, 32, 34, 36, 38, 40, and 42;~~

\_\_\_\_ (b) ~~amino acid sequences with a structure X-A-B, wherein X comprises about amino acid residues 1-75 of an interferon- $\alpha$ , A comprises about amino acid residues 76-95 of IFN- $\alpha$ 2c, and B comprises about amino acid residues 96-166 of IFN- $\alpha$ 21a;~~

\_\_\_\_ (c) ~~amino acid sequences with a structure X-A-Y, wherein X comprises about amino acid residues 1-75 of an interferon- $\alpha$ , A comprises about amino acid residues 76-95 of IFN- $\alpha$ 2c, and Y comprises about amino acid residues 96-166 of an interferon- $\alpha$ ; and~~

\_\_\_\_ (d) ~~amino acid sequences with a structure V-C-Y, wherein V comprises about amino acid residues 1-81 of an interferon- $\alpha$ , C comprises about amino acid residues 82-95 of IFN- $\alpha$ 2c, and Y comprises about amino acid residues 96-166 of an interferon- $\alpha$ ,~~

\_\_\_\_ ~~wherein the hybrid interferon- $\alpha$  polypeptide has interferon- $\alpha$  protein biological activity.~~

9. **(currently amended)** The hybrid interferon- $\alpha$  polypeptide according to claim 8<sub>1</sub>, wherein the second amino acid sequence consists of residues ~~wherein the second amino acid~~

sequence consists of residues 76-81 of interferon- $\alpha$ 21a and the third amino acid sequence  
consists of the sequence LDKFXTELXQQLND comprising one or more segments of  
interferon- $\alpha$ 21a and interferon- $\alpha$ 2c.

10. **(currently amended)** The hybrid interferon- $\alpha$  polypeptide according to claim 81,  
comprising an amino acid sequence selected from the group consisting of an amino acid  
sequence as set forth in SEQ ID NOs: 9, 11, 13, 30, 32, 34, 36, 38, 40, and 42.

11. **(currently amended)** The hybrid interferon- $\alpha$  polypeptide according to claim 10,  
wherein the sequence is selected from the group consisting of an amino acid sequence as set  
forth in SEQ ID NOs: 9, 13, 32, 34, 36, and 38.

12. **(currently amended)** The hybrid interferon- $\alpha$  polypeptide according to claim 81,  
comprising the amino acid sequence with a structure X-A-B, wherein X comprises about amino  
acid residues 1-75 of an interferon- $\alpha$ , A comprises about wherein the second amino acid  
sequence consists of amino acid residues 76-95 of interferon- $\alpha$ IFN- $\alpha$ 2c, and B comprises about  
amino acid residues 96-166 of IFN- $\alpha$ 21a.

13. **(currently amended)** The hybrid interferon- $\alpha$  polypeptide according to claim 81,  
comprising the amino acid sequences with a structure X-A-Y, wherein X comprises about amino  
acid residues 1-75 of an interferon- $\alpha$ , A comprises about wherein the second amino acid  
sequence consists of amino acid residues 76-95 of interferon- $\alpha$ 21aIFN- $\alpha$ 2c, and Y comprises  
about amino acid residues 96-166 of an interferon- $\alpha$ .

14. **(currently amended)** The hybrid interferon- $\alpha$  polypeptide according to claim 8,  
wherein the second amino acid sequence consists of residues wherein the second amino acid  
sequence consists of residues 76-81 of interferon- $\alpha$ 21a and the third amino acid sequence  
consists of the sequence LEKFXTLXQQLND comprising amino acid sequences with a  
structure V-C-Y, wherein V comprises about amino acid residues 1-81 of an interferon- $\alpha$ , C  
comprises about amino acid residues 82-95 of IFN- $\alpha$ 2c, and Y comprises about amino acid  
residues 96-166 of an interferon- $\alpha$ .

15. **(currently amended)** A nucleic acid molecule encoding a polypeptide according to claim 81.
16. **(original)** A recombinant vector comprising the nucleic acid molecule according to claim 15.
17. **(original)** A cell transformed with the recombinant vector according to claim 16.
18. **(currently amended)** A pharmaceutical composition comprising:  
a pharmaceutically acceptable vehicle or carrier; and  
at least one hybrid interferon- $\alpha$  polypeptide according to claim 81.
19. **(cancelled)** A method for treating a patient having a viral disease, comprising administering to said patient a therapeutically effective amount of at least one hybrid interferon- $\alpha$  polypeptide according to claim 8.
20. **(cancelled)** The method according to claim 19, wherein the administration is by injection.
21. **(cancelled)** A method for regulating cell growth in a patient, comprising administering to said patient a therapeutically effective amount of at least one hybrid interferon- $\alpha$  polypeptide according to claim 8.
22. **(cancelled)** The method according to claim 21, wherein the regulated cell growth is tumor cell growth.
23. **(cancelled)** The method according to claim 21, wherein the administration is by injection.
24. **(new)** A nucleic acid molecule encoding a polypeptide according to claim 10.

25. (new) A nucleic acid molecule according to claim 24, having a nucleic acid sequence as set forth in SEQ ID NO: 8, 10, 29, 31, 35, 37, 39, or 41.
26. (new) A recombinant vector comprising the nucleic acid molecule according to claim 24.
27. (new) A cell transformed with the recombinant vector according to claim 26.
28. (new) A pharmaceutical composition comprising:  
a pharmaceutically acceptable vehicle or carrier; and  
at least one hybrid interferon- $\alpha$  polypeptide according to claim 10.